SANTA CRUZ BIOTECHNOLOGY, INC.

Lipin-3 siRNA (h): sc-60944

BACKGROUND

The Lipin family of nuclear proteins contains three members: Lipin-1, Lipin-2 and Lipin-3, all of which contain a nuclear signal sequence, a highly conserved amino-terminal (NLIP) domain and a carboxy-terminal (CLIP) domain. Lipin-1 is crucial for normal adipose tissue development and metabolism. Lipin-1 selectively activates a subset of PGC-1α target pathways, including fatty acid oxidation and mitochondrial oxidative phosphorylation, by inducing expression of the nuclear receptor PPARα. Lipin-1 also inactivates the lipogenic program and suppresses circulating lipid levels. Lipin-2 is linked to Majeed syndrome, an autosomal recessive, autoinflammatory disorder. Lipin-3 is an 851 amino acid protein that localizes to the nucleus. Lipin-3 observations are useful in studies related to adipose tissue development in the context of obesity, fatty liver dystrophy, lipodystrophy, Insulin resistance and type 2 diabetes.

REFERENCES

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4. Phan, J., et al. 2005. Lipin, a lipodystrophy and obesity gene. Cell Metab. 1: 73-83.
5. Scavello, G.S., et al. 2005. Genomic structure and organization of the high grade Myopia-2 locus (MYP2) critical region: mutation screening of nine positional candidate genes. Mol. Vis. 11: 97-110.
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7. Parsons, T.R. 2006. Studies on Lipin-protein complexes: lecithin-caseinogen complexes. Biochem. J. 22: 800-810.
8. Suviolahti, E., et al. 2006. Cross-species analyses implicate Lipin-1 involvement in human glucose metabolism. Hum. Mol. Genet. 15: 377-386.

CHROMOSOMAL LOCATION

Genetic locus: LPIN3 (human) mapping to 20q12.

PRODUCT

Lipin-3 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Lipin-3 shRNA Plasmid (h): sc-60944-SH and Lipin-3 shRNA (h) Lentiviral Particles: sc-60944-V as alternate gene silencing products.

For independent verification of Lipin-3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60944A, sc-60944B and sc-60944C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Lipin-3 siRNA (h) is recommended for the inhibition of Lipin-3 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Lipin-3 gene expression knockdown using RT-PCR Primer: Lipin-3 (h)-PR: sc-60944-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.